

**84VP4 Installation Guide (using four 42VP4 Plasma Displays)**

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

**Contents**

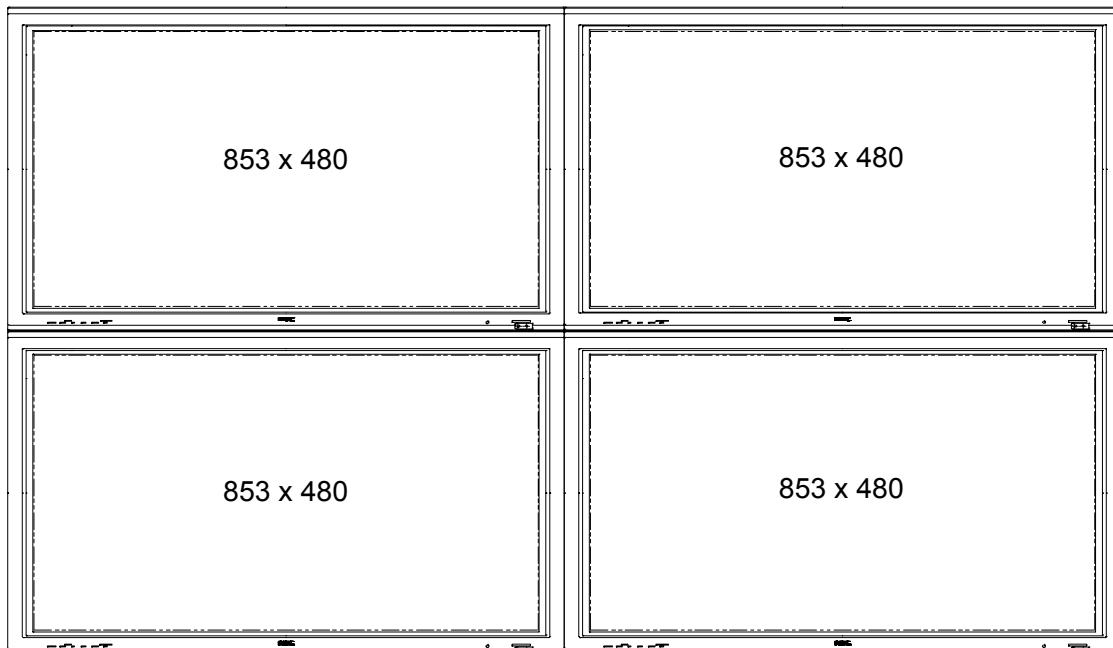
Product Description and Notes	Page 1
System Dimensions	Page 2
System Ventilation Requirements	Page 3
Quad Mount Isometric Drawing	Page 4
Mounting Points for Quad Mount	Page 5
Control	Page 6

**Product Description**

Type:	Plasma Display System (2x2 Matrix using either 42VP4 or 42VP4D)	Screen Surface:	42VP4: Anti-Reflective 42VP4D: Anti-Glare
84VP4 System Resolution:	1706x960	84VP4 System Dimensions:	80.2"(W) x 48.0"(H) x 8.0"(D)
42VP4 Display Resolution:	853x480	42VP4 Display Dimensions:	40"(W) x 24"(H) x 3.5"(D)
Aspect Ratio:	16:9	84VP4 System Weight:	319.2 lbs
Color Correction:	NEC CCF (Capsulated Color Filter)	42VP4 Display Weight:	61.8 lbs (Quad Mount Wt: 72 lbs)

**Notes**

- This document is intended to be used as a reference guide to supply useful information for a design or installation. It is not intended to be a step-by step procedure for installation.
- Any ceilings or walls must be strong enough to support the display system and the installation must be in accordance with any local building codes. All mounts should make secure contact to wood studs.
- 4:3 sources can be displayed on the 16:9 screen in either normal aspect ratio with bars on the left or right, or stretched horizontally to fill the screen using the menus (see "Aspect Modes" in menus and user manual).
- The recommended PC resolution is 1365 x 768, next recommended resolution is 848 x 480
- Distances are in inches, for millimeters multiply by 25.4.
- Distances may vary  $\pm 5\%$ .



Total Resolution: 1706 x 960

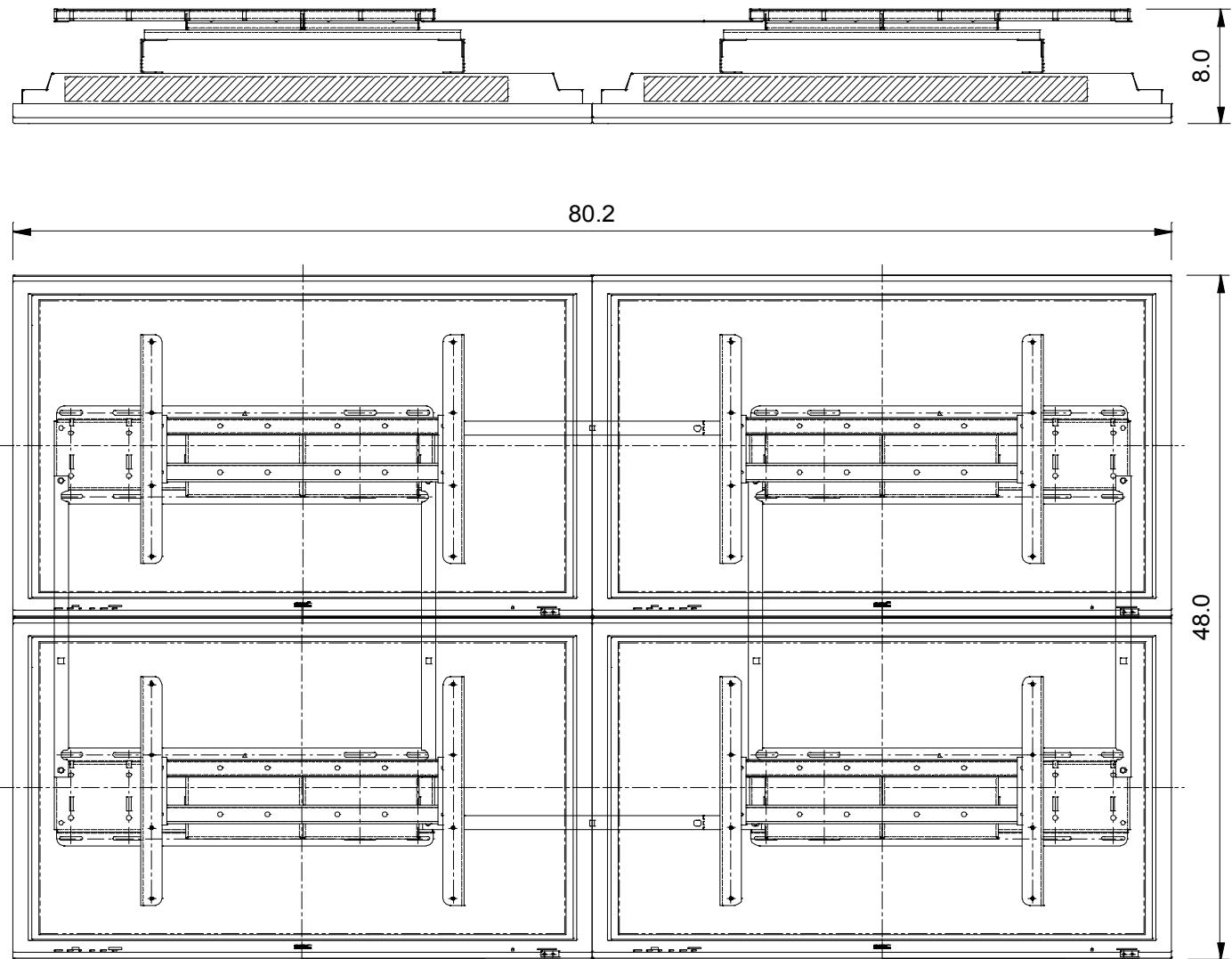
**84VP4 Installation Guide** (using four 42VP4 Plasma Displays)

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

**System Dimensions**

Dimensions are in inches. For millimeters multiply by 25.4.



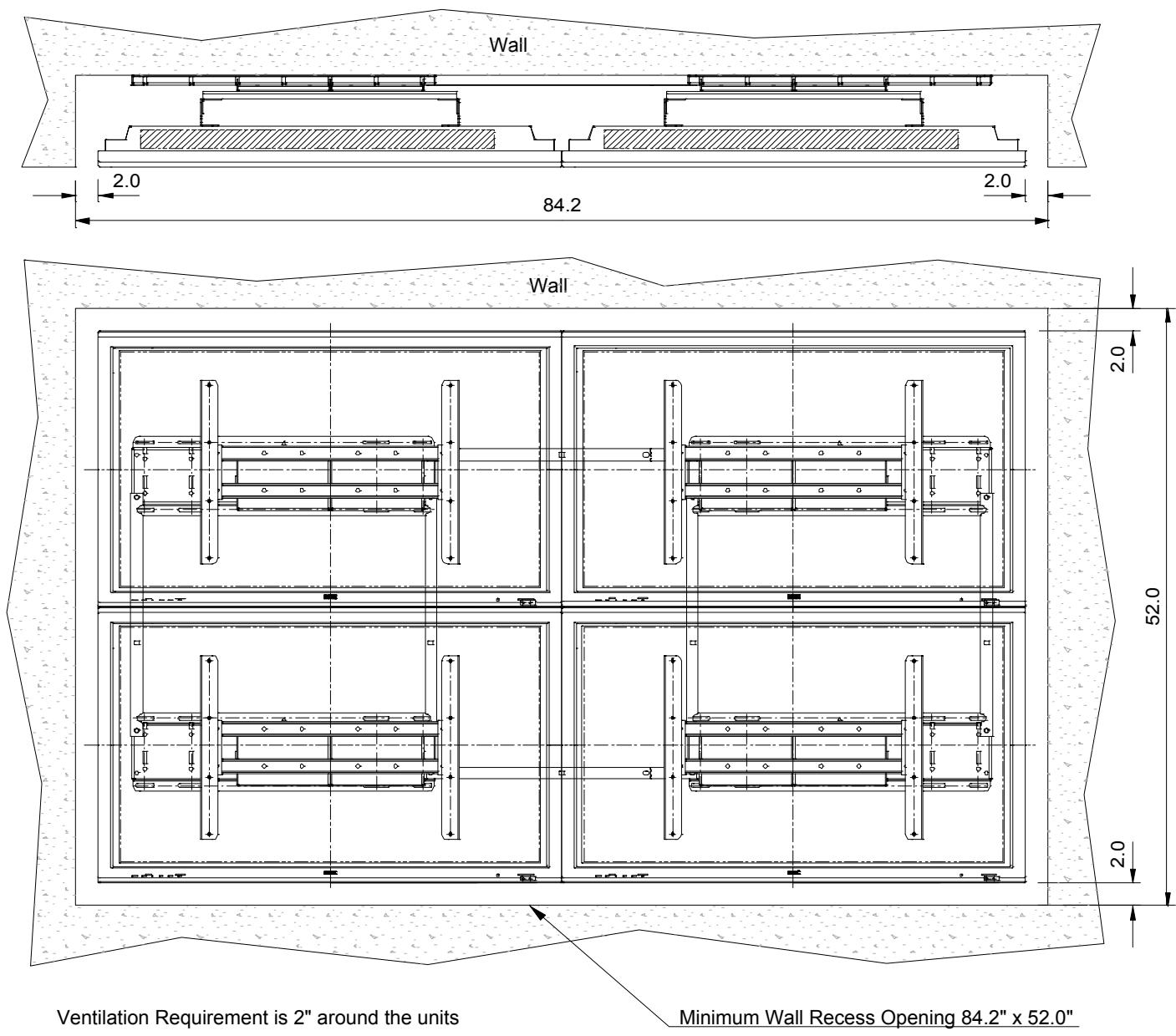
**84VP4 Installation Guide** (using four 42VP4 Plasma Displays)

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

**System Ventilation Requirements**

Dimensions below show minimum requirements for ventilation.



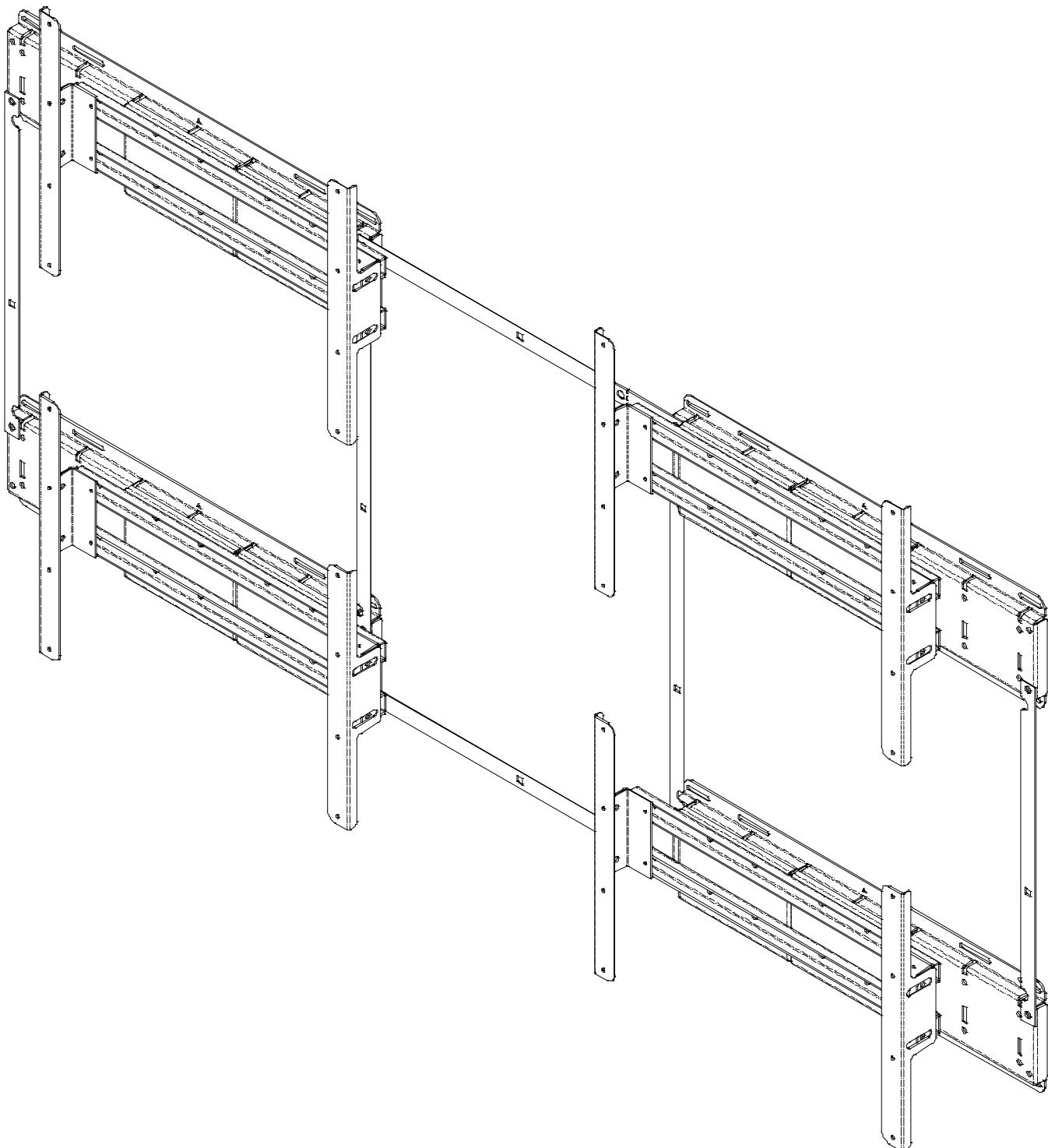
Ventilation Requirement is 2" around the units

Minimum Wall Recess Opening 84.2" x 52.0"

**84VP4 Installation Guide** (using four 42VP4 Plasma Displays)

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

**Quad Mount Isometric Drawing**

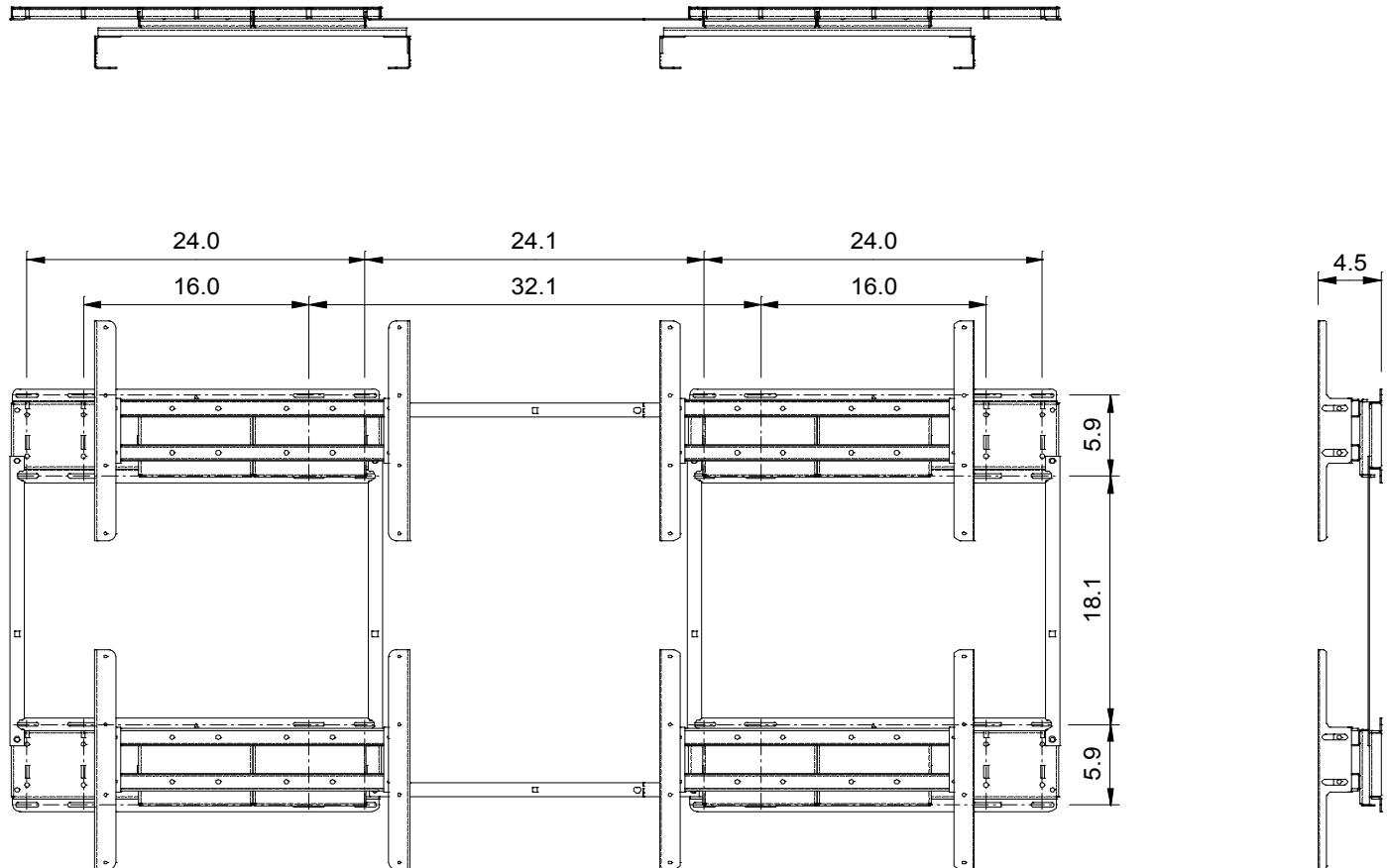
**84VP4 Installation Guide** (using four 42VP4 Plasma Displays)

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

**Mounting Points for Quad Mount**

Dimensions are in inches. For millimeters multiply by 25.4.



## 84VP4 Installation Guide (using four 42VP4 Plasma Displays)

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

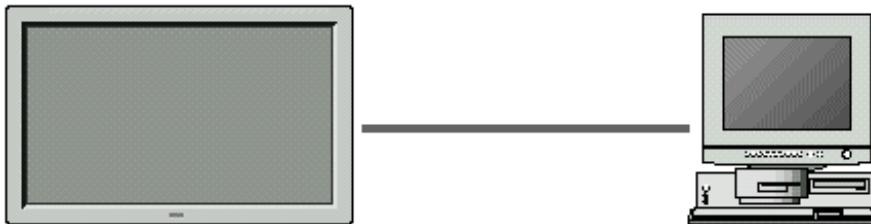
## Control

## Connections

Connections should be made as described below.

## plasma monitor

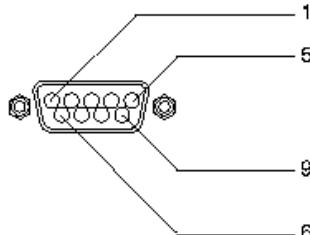
External equipment  
e.g., Personal computer



1) Connector on the plasma monitor side: EXTERNAL CONTROL connector.

Type of connector: D-Sub 9-pin male

N o.	Pin Name
1	No Connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection



2) Connector on the external equipment side: Serial port (RS-232C) connector. See the specifications of the equipment that is to be connected for the type of connector and the pin assignment.

### 3) Wiring

Use a crossed (reverse) cable.

Wire the cable so that each pair of data lines cross between the two devices. These data line pairs are RXD (Receive data) and TXD (Transmit data), DTR (DTE side ready) and DSR (DCE side ready), and RTS (Ready to send) and CTS (Clear to send).

## Communication Parameters

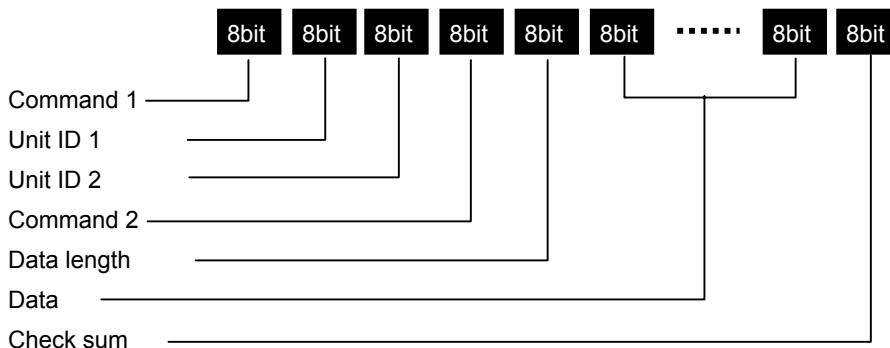
Communication Parameters	
(1) Communication system	Asynchronous
(2) Interface	RS-232C
(3) Baud rate	9600 bps
(4) Data length	8 bits
(5) Parity	Odd
(6) Stop bit	1 bit
(7) Communication code	Hex

## 84VP4 Installation Guide (using four 42VP4 Plasma Displays)

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

### Communication Format



#### Command1

Command 1, along with command 2, is a number used to distinguish each command. When making it operate using ID, bit1 and bit0 are set up as follows.

Bit1, Bit0	Unit ID distinction bit
11B	:Usually, a form (with no ID)
10B	:Usually, a form (with no ID)
01B	:Set ID
00B	:Video wall ID

In the case of ACK, when the lower order 4 bits is FH (as in 3FH and 7FH), this indicates that the commands and data of the supported equipment have been received. When the lower order 4 bits is BH (as in 3BH and 7BH), this indicates that unsupported commands and data have been received.

#### Unit ID1,2 (UA1,UA2)

Unit ID 1 and unit ID 2 are numbers used to identify the equipment that is to be connected.

60H is used for the plasma monitor and 80H is used for external control equipment such as a personal computer.

Unit ID 1: Indicates the equipment sending the signal. When supporting Set ID

by the command 1, 4 bits of low ranks of Set ID are set up.

Unit ID 2: Indicates the equipment receiving the signal. When supporting Set ID by the command 1, 4 bits of higher ranks of Set ID are set up.

\* Set ID : it is the apparatus number assigned to each plasma monitor.

#### Command 2

Command 2, along with command 1, is a number used to distinguish each command.

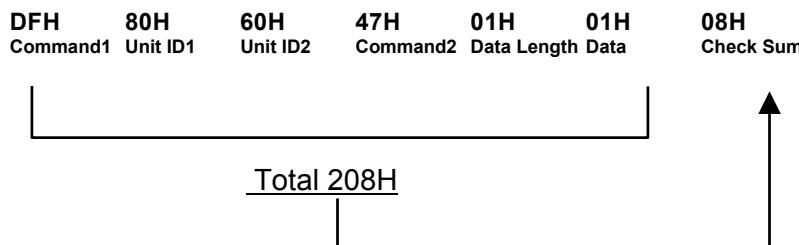
#### Check Sum (CKS), Error Processing, and ACK

The check sum described below and RS-232C odd parity are used together for a check of the received data. The check sum is the lower order 8 bits of one frame of sent or received data comprising the sum total of Command 1, Unit ID 1 and 2, Command 2, Data Length, and Data.

**84VP4 Installation Guide (using four 42VP4 Plasma Displays)**

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

**Check Sum Example****2) Error Processing**

- When the communication interval is vacant for more than 4 ms, thereafter a received Command 1 will be recognized. If, at this time, meaningful data cannot be recognized, that data will not be recognized (as valid data).
- An ACK will not be returned unless the receive data error, the check sum error, and the receive data are all taken in.

The control method of the set by Set ID

When controlling two or more sets of plasma monitors, if the command using Set ID is used, it will become controllable individually.

The example of the POWER ON command to the plasma monitor which set ID as "5" is shown below.

It is not based on ID but is the POWER ON command to all sets.

**9F 80 60 4E 00 CD**

In ID= "5", the value of ID-1=4 is set up.

**9D 84 60 4E 00 CF**

The example of a change in the single mode of a 4th page multi-system configuration and the multi-mode is shown below. ID of the set used as a master(etc PC) is set to 50, and it assumes that ID is shaken by AUTO ID to each set. ID shaken at each set is as follows.

Upper left set (master) ID = 50 = 32h

Upper right set ID = 51 = 33h

Lower right set ID = 52 = 34h

Lower left set ID = 53 = 35h

**Transmission Data**

<b>DD</b>	<b>81</b>	<b>63</b>	<b>03</b>	<b>03</b>	<b>03</b>	<b>01</b>	<b>00</b>	<b>CB</b>
<b>DD</b>	<b>82</b>	<b>63</b>	<b>03</b>	<b>03</b>	<b>03</b>	<b>02</b>	<b>00</b>	<b>CD</b>
<b>DD</b>	<b>83</b>	<b>63</b>	<b>03</b>	<b>03</b>	<b>03</b>	<b>03</b>	<b>00</b>	<b>CF</b>
<b>DD</b>	<b>84</b>	<b>63</b>	<b>03</b>	<b>03</b>	<b>03</b>	<b>04</b>	<b>00</b>	<b>D1</b>

Transmission of the above command performs a 4th page multi SPLIT display.

Moreover, the following commands are published in order to change a 4th page multi-display into a single mode display.

**DF 80 60 03 03 01 01 00 C7**

All sets become a single mode display by the above-mentioned command.

Since this command does not specify Set ID, all sets execute it.

\*:Control by ID may not be able to be performed depending on connection with external control apparatus.

**84VP4 Installation Guide (using four 42VP4 Plasma Displays)**

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

**Command Codes****01. Power ON***Function*

The external control equipment switches on the power of the plasma monitor.

*Transmission Data*

9FH 80H 60H 4EH 00H CKS

*ACK*

The plasma monitor returns the following ACK when the power is switched on.

3FH 60H 80H 4EH 00H CKS

NOTE: Do not set the Power ON or Power OFF command continuously.

**02. Power OFF***Function*

The external control equipment switches off the power of the plasma monitor.

*Transmission Data*

9FH 80H 60H 4FH 00H CKS

*ACK*

The plasma monitor returns the following ACK when the power is switched off.

3FH 60H 80H 4FH 00H CKS

NOTE: Do not set the Power ON or Power OFF command continuously.

**03. Input Switch Change***Function*

The external control equipment switches the input of the plasma monitor.

*Transmission Data*

DFH 80H 60H 47H 01H DATA00 CKS

DATA00 : Input Select 01H : Video1

02H : Video2

03H : Video3

05H : HD (HD1 or DTV or DTV1)

06H: HD2 (DTV2 or SCART1/SCART2)

07H : RGB1 / PC1

08H : RGB2 / PC2

0CH : RGB3 / PC3

0DH : HD3(SCART3)

*ACK*

The plasma monitor returns the following ACK when the input is switched.

3FH 60H 80H 47H 00H CKS

**04. AUDIO Mute ON***Function*

The external control equipment switches on AUDIO Mute of the plasma monitor.

*Transmission Data*

9FH 80H 60H 3EH 00H CKS

*ACK*

3FH 60H 80H 3EH 00H CKS

**05. AUDIO Mute OFF***Function*

The external control equipment switches off AUDIO Mute of the plasma monitor.

*Transmission Data*

9FH 80H 60H 3FH 00H CKS

**84VP4 Installation Guide (using four 42VP4 Plasma Displays)**

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

ACK

3FH 60H 80H 3FH 00H CKS

**06. PICTURE MODE Select***Function*

The external control equipment sets the picture mode of the plasma monitor.

*Transmission Data*

DFH 80H 60H 0AH 01H DATA00 CKS

DATA00: 01H : NORMAL

02H : THEATER1 (It cannot choose in the still picture input of a personal computer.)

03H : THEATER2 (It cannot choose in the still picture input of a personal computer.)

04H : Default

ACK

7FH 60H 80H 0AH 01H DATA00 CKS

DATA00: 01H : NORMAL

02H : THEATER1

03H : THEATER2

04H : Default

**07. SCREEN MODE Select***Function*

The external control equipment switches the screen mode of the plasma monitor.

*Transmission Data*

DFH 80H 60H 51H 01H DATA00 CKS

DATA00 02H : STADIUM

03H : ZOOM

04H : NORMAL

05H : FULL

06H : REAL

08H : UNDERSCAN

09H : 14:9

ACK

7FH 60H 80H 51H 01H DATA00 CKS

DATA00 02H : STADIUM

03H : ZOOM

04H : NORMAL

05H : FULL

06H : REAL

08H : UNDERSCAN

09H : 14:9

**08. AUTO PICTURE Select***Function*

The external control equipment switches on or off the AUTO PICTURE of the plasma monitor.

*Transmission Data*

DFH 80H 60H 7FH 03H DATA00 DATA01 DATA02 CKS

DATA00 : USER PICTURE Gain Flag 03H

DATA01 : AUTO PICTURE Select Flag 09H

DATA02 00H : ON

01H : OFF

ACK

7FH 60H 80H 7FH 03H DATA00 DATA01 DATA02 CKS

DATA00 : USER PICTURE Gain Flag 03H

DATA01 : AUTO PICTURE Select Flag 09H

DATA02 00H : ON

01H : OFF

**84VP4 Installation Guide (using four 42VP4 Plasma Displays)**

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

**09. CINEMA MODE Set***Function*

The external control equipment switches on or off the CINEMA MODE of the plasma monitor.

*Transmission Data*

DFH 80H 60H C1H 01H DATA00 CKS  
DATA00 : CINEMA MODE Set 01H : ON  
02H : OFF

**ACK**

7FH 60H 80H C1H 01H DATA00 CKS  
DATA00 : CINEMA MODE Set 01H : ON  
02H : OFF

**10. MULTI MODE Select***Function*

External control apparatus changes MULTI MODE of a plasma monitor.

*Transmission Data*

DFH 80H 60H 03H 03H DATA00 DATA01 DATA02 CKS

DATA00 (SCREEN DIVIDER SETTING)

01H : Single mode  
02H : Multi mode 1 screens  
03H : Multi mode 4 screens  
04H : Multi mode 9 screens

DATA01 (POSITION OF DIVIDE)

01H : Upper left selected (4 screens)  
02H : Upper right selected (4 screens)  
03H : Lower right selected (4 screens)  
04H : Lower left selected (4 screens)  
07H : Top left selected (9 screens)  
08H : Top middle selected (9 screens)  
09H : Top right selected (9 screens)  
0AH : Middle left selected (9 screens)  
0BH : Middle center selected (9 screens)  
0CH : Middle right selected (9 screens)  
0DH : Bottom left selected (9 screens)  
0EH : Bottom middle selected (9 screens)  
0FH : Bottom right selected (9 screens)

DATA02 (DISP MODE)

00H : SPLIT  
01H : BLANKING

**ACK**

7FH 60H 80H 03H 03H DATA00 DATA01 DATA02 CKS

DATA00 (SCREEN DIVIDER SETTING)

01H : Single mode  
02H : Multi mode 1 screens  
03H : Multi mode 4 screens  
04H : Multi mode 9 screens

DATA01 (POSITION OF DIVIDE)

01H : Upper left selected (4 screens)  
02H : Upper right selected (4 screens)  
03H : Lower right selected (4 screens)  
04H : Lower left selected (4 screens)  
07H : Top left selected (9 screens)  
08H : Top middle selected (9 screens)  
09H : Top right selected (9 screens)  
0AH : Middle left selected (9 screens)  
0BH : Middle center selected (9 screens)  
0CH : Middle right selected (9 screens)

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## **84VP4 Installation Guide (using four 42VP4 Plasma Displays)**

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

0DH : Bottom left selected (9 screens)  
0EH : Bottom middle selected (9 screens)  
0FH : Bottom right selected (9 screens)  
DATA02 (DISP MODE)  
00H : SPLIT  
01H : BLANKING

### **11. MULTI MODE Request**

#### *Function*

External control apparatus can know the MULTI MODE information on a plasma monitor.

#### *Transmission Data*

1FH 80H 60H 3BH 00H CKS

#### *ACK*

7FH 80H 60H 3BH 02H DATA00 DATA01 DATA02 CKS

DATA00 (SCREEN DIVIDER SETTING)

01H : Single mode  
02H : Multi mode 1 screens  
03H : Multi mode 4 screens  
04H : Multi mode 9 screens  
DATA01 (POSITION OF DIVIDE)  
01H : Upper left selected (4 screens)  
02H : Upper right selected (4 screens)  
03H : Lower right selected (4 screens)  
04H : Lower left selected (4 screens)  
07H : Top left selected (9 screens)  
08H : Top middle selected (9 screens)  
09H : Top right selected (9 screens)  
0AH : Middle left selected (9 screens)  
0BH : Middle center selected (9 screens)  
0CH : Middle right selected (9 screens)  
0DH : Bottom left selected (9 screens)  
0EH : Bottom middle selected (9 screens)  
0FH : Bottom right selected (9 screens)

DATA02 (DISP MODE)

00H : SPLIT  
01H : BLANKING

### **12. AUTO ID SET START**

#### *Function*

External control apparatus sets up ID automatically to two or more plasma monitors.

#### *Transmission Data*

5FH 80H 60H F0H 01H DATA00 CKS

DATA00 00H~FFH: ID of a master<sup>\*1</sup> is set up.

\*: when you use it by the multi-system, please remove the link input of a master<sup>\*1</sup>.

\*1: "Master" means the 1st set of PDP at the time of cable connection at the time of AUTO ID execution.

### **13. PLE LINK**

#### *Function*

External control apparatus sets up equally PLE between two or more plasma monitors.

#### *Transmission Data*

DFH 80H 60H F1H 03H DATA00 to DATA02 CKS

DATA00 00H: PLE LINK ON  
01H: PLE LINK OFF

DATA01 FFH  
DATA02 FFH

## **84VP4 Installation Guide (using four 42VP4 Plasma Displays)**

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

\*: This command is premised on the system configuration of two or more plasma monitor being a multi-system. When renewal of the PSC data based on this command is not carried out during a certain fixed period (about 2 seconds) during PLE LINK enforcement, each plasma monitor sets PSC data as FFH. Since this command is one-way traffic, there is no ACK.

\*DATA01: Please set up FFH, when you publish this command from external control apparatus. A master<sup>\*1</sup> sets up its own PSS data. As compared with its own PSS data, the plasma monitor after the master which received this command sets up the data of the larger one, and equips the output of a command with it.

\*DATA02: Please set up FFH, when you publish this command from external control apparatus. The 1st round which PSS data has not decided is FFH.

\*1: "Master" means the 1st set of PDP at the time of cable connection at the time of AUTO ID execution.

### **14. VIDEO WALL SETTING**

#### *Function*

External control apparatus sets 4screens or 9screens as a video wall.

#### *Transmission Data*

DFH 80H 60H F3H 03H DATA00 DATA01 DATA02 CKS

DATA00: 01H:1 screen  
(Matrix display function does not work.)  
04H:4 screens (2\*2 video wall)  
09H:9 screens (3\*3 video wall)  
DATA 01: 00H-FFH:Master's ID<sup>\*1</sup>  
DATA 02: 01H : Video1  
02H : Video2  
03H : Video3  
04H : HD (HD1 or DTV or DTV1)  
05H : HD2 (DTV2)  
06H : HD3 (DTV3)  
07H : RGB1 / PC1  
08H : RGB2 / PC2  
09H : RGB3 / PC3

\*: This command is used to following system.

1. The system configuration is video wall system (4screens or 9screens).
2. The ID number from a master<sup>\*1</sup> display is set the continuous number.

DATA00: Specify the composition of a multi-system.

DATA01: Set master's ID<sup>\*1</sup>.

\*1: "Master" means the 1st set of PDP at the time of cable connection at the time of AUTO ID execution.

### **15. Running Sense**

#### *Function*

External control apparatus grasps the power supply state of a plasma monitor.

A plasma monitor is made to recognize connection of PC CONTROL.

#### *Transmission Data*

1FH 80H 60H 88H 00H CKS

#### *ACK*

7FH 60H 80H 88H 01H DATA CKS

DATA: Bit0:Connect Condition  
0: No connection  
1: Connected  
Bit1: 0: Fixed  
1:-  
Bit2: Power Status  
0:POWER ON

**84VP4 Installation Guide** (using four 42VP4 Plasma Displays)

(also a reference for optional Quad Mount used with 42VP4/42VP4D)

v1.2

1:POWER OFF(STANBY)  
Bit3: 0: Fixed  
Bit4: 0: Fixed  
Bit5: 0: Fixed  
Bit6: 0: Fixed  
Bit7: 0: Fixed